WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a bottom electrode;

a top electrode; and

a dielectric film provided between the bottom electrode and the top electrode and made of a perovskite type ferroelectrics containing Pb, Zr, Ti and O, the dielectric film comprising a first portion formed of a plurality of crystal grains partitioned by grain boundaries having a plurality of directions.

2. The semiconductor device according to claim 1, wherein the crystal grain contained in the first portion is shaped conical or oval.

3. The semiconductor device according to claim 1, wherein the dielectric film further comprises a second portion provided between the bottom electrode and the first portion and formed of a plurality of crystal grains partitioned by grain boundaries extending in one direction.

4. The semiconductor device according to claim 3, wherein the crystal grain contained in the second portion is shaped columnar.

5. The semiconductor device according to claim 3, wherein the dielectric film further comprises a third portion provided between the top electrode and the first portion and formed of a plurality of crystal grains partitioned by grain boundaries extending in one

direction.

6. The semiconductor device according to claim 5, wherein the crystal grain contained in the third portion is shaped columnar.

7. The semiconductor device according to claim 1, wherein the dielectric film further comprises a second portion provided between the top electrode and the first portion and formed of a plurality of crystal grains partitioned by grain boundaries extending in one direction.

8. The semiconductor device according to claim 7, wherein the crystal grain contained in the second portion is shaped columnar.

9. The semiconductor device according to claim 1, wherein at least one of the bottom electrode and the top electrode includes a film containing Ru.

10. A method of manufacturing a semiconductor device, comprising:

forming on a bottom electrode a dielectric film made of a perovskite type ferroelectrics containing Pb, Zr, Ti and O; and

forming a top electrode on the dielectric film,

forming the dielectric film comprising:

forming a first portion of the dielectric film on the bottom electrode by an annealing under an oxygen gas atmosphere; and

forming a second portion of the dielectric film on

the first portion by an annealing under an inert gas atmosphere.

11. The method of manufacturing a semiconductor device according to claim 10, wherein:

forming the first portion comprises annealing a first film containing Pb, Zr, Ti and O under an oxygen gas atmosphere; and

forming the second portion comprises annealing the first film under an inert gas atmosphere.

12. The method of manufacturing a semiconductor device according to claim 10, wherein:

forming the first portion comprises annealing a first film containing Pb, Zr, Ti and O under an oxygen gas atmosphere; and

forming the second portion comprises forming a second film containing Pb, Zr, Ti and O on the first film and annealing the second film under an inert gas atmosphere.

13. The method of manufacturing a semiconductor device according to claim 10, wherein:

forming the dielectric film further comprises forming a third portion of the dielectric film on the second portion by an annealing under an oxygen gas atmosphere.

14. The method of manufacturing a semiconductor device according to claim 10, wherein at least one of the bottom electrode and the top electrode includes

a film containing Ru.

15. The method of manufacturing a semiconductor device according to claim 10, wherein the inert gas includes at least one of a He gas, a Ne gas, an Ar gas, a Kr gas, a Xe gas, a Rn gas, and a nitrogen gas.